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ABSTRACT

Use of client records and census data as a research methodology can provide mental health planners with information on community needs as well as the adequacy of existing programs. Three ways of analyzing client records in conjunction with census data are: (1) tract by tract, comparing client geographic distribution with census characteristics; (2) client by tract, comparing demographic characteristics of clients with those of the general population in census tracts and the catchment area; and (3) client by client, comparing characteristics of client subpopulations. Examples based on three years of client records for a community mental health center demonstrated the uses of these analyses by showing that census areas characterized by high proportions of disenfranchised groups (e.g., divorced, low status, Spanish heritage) were high service utilizers; higher proportions of divorced, high school educated, and unemployed residents utilized services more than expected by population estimates; and dropouts from therapy could be indicated by demographic differences in marital status, income level, employment status, educational level, ethnicity, and previous mental health treatment. (Author/MH)

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A PROGRAM EVALUATION USING CLIENT RECORDS
AND CENSUS DATA

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ABSTRACT

THREE PRIMARY WAYS OF ANALYZING CLIENT RECORDS IN CONJUNCTION WITH CENSUS DATA WERE PRESENTED: (1) A TRACT BY TRACT ANALYSIS COMPARING THE GEOGRAPHIC DISTRIBUTION OF CLIENTS WITH CENSUS CHARACTERISTICS; (2) A CLIENT BY TRACT ANALYSIS COMPARING THE DEMOGRAPHIC CHARACTERISTICS OF THE CLIENTS WITH THOSE OF THE CATCHMENT AREA; AND (3) A CLIENT BY CLIENT ANALYSIS COMPARING THE CHARACTERISTICS OF CLIENT SUBPOPULATIONS (E.G., IMPROVED VERSUS NOT IMPROVED). EXAMPLES BASED ON THREE YEARS OF CLIENT RECORDS FOR A COMMUNITY MENTAL HEALTH CENTER DEMONSTRATED THE USES OF THESE ANALYSES BY SHOWING THAT (1) CENSUS AREAS CHARACTERIZED BY HIGH PROPORTIONS OF DISENFRANCHISED GROUPS (E.G., DIVORCED, LOW STATUS, SPANISH HERITAGE) WERE HIGH SERVICE UTILIZERS; (2) HIGHER PROPORTIONS OF DIVORCED, HIGH SCHOOL EDUCATED AND UNEMPLOYED RESIDENTS UTILIZED SERVICES THAN EXPECTED BY POPULATION ESTIMATES; AND (3) DROP-OUTS FROM THERAPY COULD BE DISCRIMINATED BASED ON DEMOGRAPHIC DIFFERENCES IN MARITAL STATUS, INCOME LEVEL, EMPLOYMENT STATUS, EDUCATIONAL LEVEL, ETHNICITY AND PREVIOUS MENTAL HEALTH TREATMENT.

Uses of Client Records and Census Information in Mental Health Planning

Effective mental health planning requires the integration of need assessment and program evaluation information, which are distinct yet highly interdependent processes (Nguyen, Attkisson & Bottino, Note 1). Program evaluation is the "process of making reasonable judgments about program effort, effectiveness, efficiency and adequacy" (Attkisson, & Broskowski, 1978, p. 24). while need assessment is concerned with the monitoring of needs, wants and demands for human services through direct (e.g., surveys) and indirect (e.g., social indicators) means. There is a clear overlapping of the two processes in data collection and in the analysis of problem areas such as service accessibility and the pattern of service utilization (Nguyen, et al., Note 1).

A research methodology oriented around comparing client data with census data can integrate these two processes by providing mental health planners with valuable information about the needs of the community as well as the adequacy of existing programs. Service utilization and social indicator approaches to need assessment (Bell, Nguyen, Warheit & Buhl, 1978) rely on client records and census information respectively as data sources. The service utilization approach uses client records to identify the distribution of disorders in the community and their relationship to the demographic characteristics of clients. The social indicator approach uses census information to estimate the mental health needs of geographic subareas (e.

g., census tracts) by charting the distribution of social and demographic characteristics in the community (Zautra & Simons, 1978) and identifying groups with special mental health needs (e.g., the disabled and the elderly). Program evaluation efforts may also use both kinds of data; for example, information on program adequacy can be obtained by comparing the demographic characteristics of individual census tracts with the characteristics of clients utilizing the community mental health center (CMHC) (Hagedorn, Beck, Newbert, & Werlin, 1976, pp. 123-146).

There are three primary ways in which client data and census data can be compared. First is the tract-tract analysis in which one census tract (or group of tracts) is compared with another census tract. These analyses provide the CMHC with information on geographic accountability, i.e., does the center serve its census areas proportionate to their need? An example of this approach would be to divide census tracts into three groups of low, medium and high rates of service use and compare the groups on the basis of social indicators obtained from census data. Mental health planners can expect that an accountable CMHC would show patterns of service use comparable to past studies (e.g., Bloom, 1975; Moos, 1976; Zautra & Simons, 1978) in which areas with low socioeconomic and educational levels and high rates of marital disruption are found to be frequent service utilizers. Also, utilization rates should be higher in less affluent areas, since most public mental health programs are geared to reach individuals who cannot afford private care (Stewart & Poaster, 1975). Planners should be aware that the

underlying assumption of this approach is that need can be estimated from demand for services. The demand for and utilization of services depends on the availability, acceptability and accessibility of services along with the public's awareness of these services (Bell et al., 1978). Thus, service utilization rates may not accurately reflect need due to one or more of these factors.

A second approach is the client-tract analysis in which the demographic characteristics of the client population are compared with those of the general population in census tracts and the catchment area as a whole. This approach provides for demographic accountability by enabling mental health planners to ask the question of whether the clients utilizing the CMHC are the ones in the greatest need of mental health services. Third is the client-client analysis. Here the characteristics of client subpopulations (e.g., improved versus not improved) are compared with one another to assess whether the programs provided by the center are differentially successful across groups.

Method

The Community

The residents in the catchment area of a Rocky Mountain State CMHC served as the target population for this study. Over 175,000 people lived in this primarily suburban area, which contained a large university and student population. One-quarter of the residents lived alone, 30 percent had moved within the past year and 7 percent were divorced or separated. The area was predominantly White, with 6 percent of the population being

of Spanish heritage and 1 percent being Black. Ten percent of the family incomes fell below the poverty level, with the median family income being approximately \$6300. The CMHC operated three treatment facilities, each located in geographically distinct parts of the catchment area.

Measures

Client measures. All available demographic information was extracted from the client records, a one-page standardized intake and termination form. This form provided data on seven variables: sex (male, female), marital status (single, married, divorced/separated, widowed), employment (unemployed, employed, homemaker, preschool or student), education (less than high school, high school diploma, some college, college diploma, post-graduate), family monthly income (\$500 or less, \$501 to \$800, \$801 or more), ethnicity (white, nonwhite) and previous mental health treatment (no, yes). The amount of data missing on the forms averaged 7.7 percent on these variables, ranging from .5 percent on sex to 26.7 percent on family monthly income. Adult admissions, defined as individuals 18 years or older at the time of admission, comprised 75.8 percent of the total admissions while child admissions (those under 18 years) constituted 24.2 percent. All clients (N = 6755) seen over a three year period from 1973 to 1975 at the CMHC were included in the study.

Census measures. The Mental Health Demographic Profile System (MHDPS) (Rosen, Lawrence, Goldsmith, Windle & Shambaugh, 1975) was used to obtain 1970 census data for each of the 50 census tracts in the catchment area under investigation. In order

to insure that the ratio of census variables to observations (i. e., census tracts) was not less than 1:4 for certain analyses, only 12 social indicators were chosen from a list of 108 statistics provided by the MHDPS. These 12 indicators were selected on the basis of their purported correlation with high rates of mental disorders (e.g., Rosen, et al., 1975) and their use in previous research to predict mental health usage (e.g., Bloom, 1975; Zautra & Simons, 1978). The indicators selected were: median family income, poverty (percent of families below the poverty level), low status occupations (percent of males 16 and over who are employed as operatives, service workers and laborers), high school completion (percent of adults 25 and over who completed high school), youth dependency ratio (persons under 18 per 100 persons 18-64 in household population), aged dependency ratio (persons 65 and over per 100 persons 18-64 in household population), recent movers (percent of population who moved into present residence during the past year), divorced/separated (percent of males and females 14 and over who are divorced or separated), units rented (percent of occupied housing units that are renter occupied), Spanish heritage (percent of heads of households who are of Spanish heritage), disabled (percent of persons 16-64 not inmates of institutions and not attending school who are disabled or handicapped) and living alone (percent of households with only one person).

The data for two variables, unemployed (percentage of civilian labor force 14 and over who are unemployed) and distance (as measured from the geographic center of the census tract to the

nearest of the three treatment locations), were not obtained from the MHDPS. Because unemployment rates fluctuate from year to year, the mean 1973 to 1975 rate for the SMSA (Dept. of Labor, Employment & Training Administration) was used in place of the 1970 census figure. The drawback of using SMSA rates is that they apply to an area much larger than the one under a CMHC's domain, and, therefore, individual census tract rates are unobtainable.

Criterion measures. Service utilization rates served as the criterion variable for the tract-tract and client-tract analyses. These rates were computed by dividing a census tract's total admissions to the center from 1973 to 1975 by the population of the specific tract. Three-year utilization rates were calculated in order to increase the stability of this indicator. The rates ranged from .6 percent to 8.3 percent across census tracts with a mean of 3.9 percent.

For the client-client analysis two additional variables were selected to provide some information on how well clients were being served once they entered treatment. A dropout was defined as a client seen a maximum of two times (including intake) and having a termination status indicating "condition not known" on their record. Unimproved clients received three or more treatment sessions and were viewed by therapist as not improved or worse at the time of treatment termination. Rates were computed by dividing the number of dropouts or unimproved clients by the total number of admissions to the center.

Procedures for Data Analysis

The census tract was the primary geographic unit of analysis and all clients were coded according to the census tract in which they lived. This allowed for the calculation of individual census tract scores for each of the client and census variables. Analyses involved grouping the data either by census tract (resulting in 50 scores for a given measure) or for the entire catchment area. Three basic ways of comparing census data with client data were used in this study: tract-tract comparisons, client-tract comparisons and client-client comparisons.

In the tract-tract analyses, the 50 census tracts were split into three groups of approximately equal size on the basis of their service utilization rates, and a one-way analysis of variance was performed using each of the 12 selected census variables to determine whether the demographic composition of low, medium and high utilizing tracts differed substantially from one another. Multiple regression analyses using a forward step-wise inclusion were also conducted to show the relative contributions of the census variables and summarize the strength of the association between census indicators and utilization rates. In these analyses the variable with the highest correlation with the criterion is entered first, followed, one at a time, by those variables with the highest correlation with the criterion after the effects of already entered variables are partialled out (Kerlinger & Pedhazur, 1973). Only statistically significant variables were permitted to enter the regression equation (F 's to enter ≥ 4.11 ; d.f. = 1,37; $p < .05$).

In the client-tract analyses, demographic characteristics of residents living in the catchment area were compared with those of clients visiting the center. Such comparisons were possible for the variables divorced/separated, high school completion, nonwhite ethnicity and unemployed. Census data were correlated with client data on the first three measures across the 50 census tracts as a test of whether the center's clients had the same geographic distribution as the catchment area. For example, census tracts with high divorced/separated rates may or may not contribute a high proportion of divorced/separated clients to the center. A high positive correlation on a given measure would indicate that the center was geographically accountable to that specific group.

In the client-client analyses, admissions to the center were divided into two mutually exclusive groups of those who "dropped out" and those who remained in treatment. This latter group was then subdivided into clients who improved as a result of treatment and those who did not improve. The demographic characteristics of each group was studied to determine whether demographic differences existed between clients who dropped out and those who did not and between clients who improved and did not improve as a consequence of therapy. Comparisons were made on the variables of sex, marital status, employment, education, family monthly income, ethnicity and previous mental health treatment.

Results

Tract-tract analyses. The demographic characteristics of high, medium and low utilizing tracts were quite distinct. As

shown in Table 1, 10 of the 12 indicators significantly discriminated between the three groups of service utilizers. The high utilizing tracts were generally poor and unstable communities as indicated by their low median family income, high rates of poverty, and large numbers of recent movers and units rented. The people in these areas tended to work in low status occupations, have low educational levels and live alone. Many of the residents were divorced, elderly and of Spanish heritage. A correlational analysis revealed that the relationship between a census tract's service utilization rate and its distance from the nearest treatment center was quite weak ($r = .13$).

A step-wise multiple regression predicting service rates allowed two variables to enter the equation ($R = .758$; $F(2,47) = 31.79$; $p < .001$) and accounted for 57 percent of the variance in utilization rates. First to enter the equation was the variable low status occupations followed by units rented. The variable disabled also would have entered the regression equation and accounted for 4 percent of the variance in utilization rates; however, its contribution to the regression equation was uninterpretable in anything other than a purely statistical context. Disabled had a low positive correlation with service utilization ($r = .24$) but entered the regression equation with a negative beta weight value ($\beta = -.23$).

Many of the other census variables were highly correlated with service utilization but did not enter the regression equation due to high intercorrelations with the variables low status and units rented. For example, the average correlation between

low status and the variables high school education, divorced/separated and poverty was .787. A supplementary analysis revealed that when adult service utilization was used as the criterion in place of total service utilization, percent divorced/separated would enter the regression equation first followed by low status occupations and account for 59 percent of the variance in adult admissions. In addition, units rented was a marginally significant predictor of adult utilization rates (F to enter = 4.08; d.f. = 1,37; $p < .07$) after accounting for the effects of divorced/separated and low status occupations.

Divorced/separated is a composite score of the percent of males and females who are divorced or separated. When this variable was broken down into its two respective components, percent females divorced/separated proved to be a significantly better correlate of service utilization than percent males divorced/separated (Hotelling $t(47) = 2.24$, $p < .05$).

Client-tract analyses. A disproportionate number of divorced/separated, high school educated and unemployed adults utilized the CMHC. Forty-one percent of the adult clients seen over the three year period were divorced/separated, 79 percent completed high school and 34 percent were unemployed. This contrasts with the catchment area means of approximately 7 percent, 66 percent and 6 percent, respectively. The percentage of nonwhite admissions to the center was approximately proportionate to the percentage of nonwhites in the catchment area. Nonwhite clients comprised 9 percent of all admissions and made up roughly 8 percent of the catchment areas's population.

None of the census and CMHC rates are exactly comparable to one another due to the differences in the way each was calculated. The CMHC rates were all calculated using the base population of adults 18 and over, while the census computed divorced/separated rates for individuals 14 and over and based their high school completion percentages on the adult population 25 and over. The unemployment percentage for the community is most likely an underestimation of the actual rate, because the unemployment rate for the SMSA is traditionally lower than that of the catchment area under investigation. However, while the differences in the way these rates were calculated should be acknowledged, correction for these differences would change the percentages at most a few points in either direction.

The correlational analysis revealed that the number of divorced/separated, high school educated and nonwhite clients visiting the center from a given census tract was positively related to the number of divorced/separated, high school educated and nonwhite clients who lived in that census tract. In general, more of the clients possessing these demographic characteristics came from census tracts having a large proportion of these kinds of residents than from census tracts possessing a small proportion of divorced/separated, high school educated and nonwhite clients. The correlation coefficients were .73, .80 and .75, respectively.

Client-client analyses. Forty-one percent of all admissions to the center dropped out of treatment and of those clients who remained, 88 percent improved and 12 percent did not improve as

judged by their therapist. Table 2 shows that the demographic characteristics of clients proved to be important determinants of whether they dropped out of treatment, and, to a lesser degree, whether they benefited from therapy.

The dropout rate of nonwhite clients was significantly higher than that of white clients ($\chi^2(1)=6.15, p<.02$) as was the dropout rate of clients with previous mental health treatment when compared to clients seeking help with their mental health problems for the first time ($\chi^2(1)=11.97, p<.001$). The significant effect of educational level ($\chi^2(4)=10.14, p<.05$) was due primarily to the lower dropout rate among clients who had completed some college. Widowed clients were the people most likely to drop out of therapy, while clients in the middle income group appeared to be the least likely to do so. Although the reliability of the family monthly income findings are questionable due to the 27 percent of missing data for the income variable, the effect seems to be a particularly powerful one ($\chi^2(2)=20.77, p<.001$). Significant effects due to employment status ($\chi^2(3)=44.66, p<.001$) were caused by the high dropout rates among unemployed and the relatively low dropout rates among students and employed individuals. Differences between the dropout rates of males and females were not significant.

Analysis of the therapists' ratings on client improvement revealed that individuals seeking mental health treatment for the first time were more likely to improve than clients with previous mental health treatment ($\chi^2(1)=7.92, p<.01$). Unimprovement rates were lowest for clients with a family income of

over \$800 per month and highest for clients in the low income bracket of monthly earnings under \$500 ($\chi^2(2)=9.09$, $p<.02$). This finding, however, must be interpreted cautiously since the income level of over one-quarter of the clients was not recorded on the intake forms. The variable employment status approached statistical significance ($\chi^2(3)=7.73$, $p<.07$) in discriminating between clients who would or would not improve during therapy, suggesting that students were more likely to improve than those unemployed. Client improvement was not related to sex, marital status, educational level and ethnicity.

Discussion

Each of the three analyses provided the CMHC with valuable information. The tract-tract analysis revealed that there were distinctive demographic differences between high, medium and low service utilizing census tracts, that certain social indicators were good predictors of service utilization for the catchment area, and that distance from the center was not related to a census tract's utilization rate. The client-tract analysis pointed out that some demographic groups used the CMHC in numbers disproportionate to their representation in the catchment area, and that the utilization rates of some subgroups was directly related to the proportion of demographically similar residents living in the client's census tract. The client-client analysis revealed that nearly half of the clients either dropped out of treatment or left it unimproved. Some of the clients most likely to drop out and/or not improve with treatment could be identified along demographic lines.

The client dropout rate of over 40 percent seems quite high, but it appears to be comparable to that reported by other investigators. Sue (1977), for example, calculated the dropout rate for 17 CMHCs in an ethnically similar area (90% white-10% non-white) and found the dropout rate to be 30 percent for whites and approximately 50 percent for nonwhites. However, in that study dropping out was defined as the failure to return after one rather than two sessions, which suggests that the dropout rate may have been even higher if the same criterion used in the present investigation had been applied. The results revealed that the demographic characteristics of the client did a good job discriminating whether he or she would drop out of treatment but not whether the individual would improve from treatment. Treatment effectiveness appeared quite uniform across demographic subgroups for clients who remained in treatment. Based on these findings the CMHC should study a client's first contacts with the center and its personnel. This center may communicate a social atmosphere that is differentially attractive to people of varying demographic groups.

The more information collected by the CMHC on the standardized intake form, the more indepth an analysis can be performed. Care should be taken to collect and organize the data in a fashion comparable to that of the MHDPS. In particular, the program evaluator should note the base population upon which each MHDPS statistic was computed. For example, rates relating to marital status (e.g., divorced, widowed, etc.) are computed for individuals 14 and over while high school completion rates

are based on adults 25 and over.

Conducting similar program evaluations on a periodic basis can determine whether programs and policy decisions aimed at correcting problems have been effective. The client-client analyses can be undertaken as often as the CMHC wishes, while the tract-tract and client-tract analyses require census data. Complete census information is only available every ten years, but good approximations of community characteristics can often be obtained from market research companies which conduct comprehensive surveys on an annual or biannual basis.

The utility of this type of research methodology is that results can be obtained quickly and inexpensively with existing data sources. These analyses can identify problem areas, raise questions and serve as an evaluation tool if conducted with some regularity. What they cannot do is uncover the reasons for differential patterns of service utilization among the catchment area population. An answer to this question requires a more comprehensive (and costly) assessment of community needs. If this limitation is recognized, then analyses using client records and census information can play a valuable role in the comprehensive evaluation program of a community mental health center.

Reference Note

1. Nguyen, T. D., Attkisson, C. C., & Bottino, M. J.
Definition and identification of human service
need in a community context. A paper presented
at the National Conference on Needs Assessment
in Health and Human Services, University of
Louisville, Louisville, Kentucky, March 1976.

References

- Attkisson, C. C., & Broskowski, A. Evaluation and the emerging human service concept. In C. C. Attkisson, W. A. Hargreaves, M. J. Horowitz & J. E. Sorenson (Eds.), Evaluation of human service programs. New York: Academic Press, 1978.
- Bell, R. A., Nguyen, T. D., Warheit, G. J., & Buhl, J. M. Service utilization, social indicator, and citizen survey approaches to human service need assessment. In C. C. Attkisson, W. A. Hargreaves, M. J. Horowitz & J. E. Sorenson (Eds.), Evaluation of human service programs. New York: Academic Press, 1978.
- Bloom, B. L. Changing patterns of psychiatric care. New York: Human Sciences Press, 1975.
- Hagedorn, H. J., Beck, K. J., Newbert, S. S. & Werlin, S.H. A working manual of simple program evaluation techniques for community mental health centers. BHEW Publication ADM 76-404, Cambridge, Massachusetts: Arthur D. Little, 1976.
- Kerlinger, F., & Pedhazur, E. Multiple regression in behavioral research. San Francisco: Holt, Rinehart, and Winston, Inc., 1973.
- Moos, R. H. The human context: Environmental determinants of behavior. New York: John Wiley and Sons, 1976.

- Rosen, B. M., Lawrence, L., Goldsmith, H. F., Windle, C. D.
& Shambaugh, J. P. Mental health demographic profile
system description: Purpose, contents, and sampler of
uses (NIMH Series C. No. 11 DHEW Publication N ADM 76-263).
Washington, D. C.: United States Government Printing
Office, 1975.
- Stewart, R., & Poaster, L. Methods of assessing mental and
physical health needs from social statistics. Evaluation,
1975, 2, 67-70.
- Sue, S. Community mental health services to minority groups:
Some optimism, some pessimism. American Psychologist,
1977, 32, 616-624.
- Zautra, A., & Simons, L. S. The assessment of a community's
mental health needs. American Journal of Community Psy-
chology, 1978, in press.

Table 1
Social Indicators for Census Tracts with Low, Medium
and High Rates of Service Utilization^a

Dependent Variables	Census Tract Utilization Rate				
	Low ^b	Medium ^c	High ^d	F (df=2,47)	p<
<u>Social Indicators</u>					
Median Family Income	\$10,090	\$6,833	\$5,020	5.61	.007
Poverty	5.77%	11.64%	17.37%	11.43	.001
Low Status Occupations	19.98%	35.52%	45.92%	17.27	.001
High School Completion	80.12%	62.17%	55.55%	19.37	.001
Youth Dependency Ratio	53.91%	57.32%	45.37%	1.96	.150
Aged Dependency Ratio	23.84%	19.68%	30.31%	3.28	.045
Recent Movers	26.59%	31.30%	38.21%	3.09	.053
Divorced/Separated	4.35%	7.58%	12.42%	12.65	.001
Units Rented	35.02%	45.25%	65.86%	6.04	.005
Spanish Heritage	1.94%	8.48%	8.97%	6.76	.003
Disabled	4.85%	5.79%	6.39%	.25	.778
Living Alone	17.39%	21.17%	37.80%	7.16	.002

^aBased on unduplicated admissions for a three year period.

^bRate = 6 to 28 clients per 1000 residents; n = 17

^cRate = 30 to 46 clients per 1000 residents; n = 18

^dRate = 50 to 83 clients per 1000 residents; n = 15

Table 2

Proportion of Clients Dropping Out or Unimproved after
Treatment by Demographic Characteristics

Client Characteristics	Dropout (%) χ^2 (N=2747)		Unimproved (%) χ^2 (N=462)	
<u>Sex (.5%)^a</u>		N.S.		N.S.
Males	40.3		11.0	
Females	40.9		12.0	
<u>Marital Status (4.6%)</u>		12.14 ^{**}		N.S.
Single	40.0		11.1	
Married	38.9		11.6	
Divorced/Separated	41.0		12.0	
Widowed	52.4		15.4	
<u>Income (26.7%)</u>		20.77 ^{***}		9.09 [*]
\$500 or less	39.5		12.4	
\$501 to \$800	33.6		10.2	
\$801 or more	41.6		7.5	
<u>Employment (5.2%)</u>		44.66 ^{***}		7.73 (p<.07)
Unemployed	45.4		12.9	
Employed	37.4		11.2	
Homemaker	41.9		12.4	
Preschool or Student	35.2		9.1	
<u>Education (11.0%)</u>		10.14 [*]		N.S.
Less than high school	40.7		11.7	
High school diploma	40.1		11.7	
Some college	35.5		13.1	
College diploma	41.5		7.8	
Post-graduate	38.5		9.7	
<u>Ethnic Group (1.9%)</u>		6.15 [*]		N.S.
White	39.4		11.1	
Non-white	44.4		14.1	
<u>Previous Treatment (3.8%)</u>		11.97 ^{***}		7.92 ^{**}
No	39.4		10.7	
Yes	43.7		13.7	

^a Percent of missing data.

* p < .05

** p < .01

*** p < .001